

Finalization

Ableton Live Pack by PerforModule User Manual



A shrewdly efficacious audio mastering template.

Contents:

2. **Introduction:** What Is It? How Is It Unique?
3. Effect Rack: **Velour.**
4. Effect Rack: **Secret Technology EQ.**
5. Effect Rack: **Tri-Level Splytter.**
6. Effect Rack: **Woof.**
7. Effect Rack: **ParallAux SMASH.**
8. Effect Rack: **Inflaturator.**
9. Effect Rack: **Parallelimit.**
10. Incorporating your favorite plugins.



² Finalization ~ Introduction.

Finalization: What is it? How is it Unique?

A Self-Contained Mastering Template w/ Bespoke Effect Racks.

A fresh template built from the ground up using only built-in Ableton Audio Effects. It features modular effect racks that each address a specific aspect of audio finalization, as well as a Live Set that provides a highly effective workflow geared towards finishing material for presentation.

- ✓ *Velour* provides the gentlest possible high-cut, reacting to source.
- ✓ *Secret Technology EQ* grants mastering-optimized, multi-spatial EQ.
- ✓ The *Tri-Level Splytter* is a next-level way to apply compression/expansion/etc.
- ✓ *Woof* is a slickly-implemented parallel hybrid lo-cut filter & fundamental resonance booster.
- ✓ *ParallAux SMASH* is for adding auxiliary density and/or punch in the *Parallel Pressure* channel.
- ✓ The *Inflaturator* is a saturator dialed to an infamous processor, optimized for finalizing tracks.
- ✓ *Parallelimit* provides the ability to blend together Limiter's LR and MS stereo modes.

Philosophy.

Each individual effect rack is optional. It is not expected that you will use all of the included tools for finalizing every specific song, thus most begin "off" in the template to help avoid the temptation for arbitrary usage. Just use those effect modules that you need to, when you need to!

For times when involved work is called for during a mastering job, the included tools will cover just about every scenario that wouldn't be preferable to go back to the mix for. In other words: if it's not here, you probably don't need it. That said, you can certainly add in your own favorite go-to mastering plugins to save within a modified version of the template. Alternatively, you can drop the *Finalization* effects into your existing mastering template.

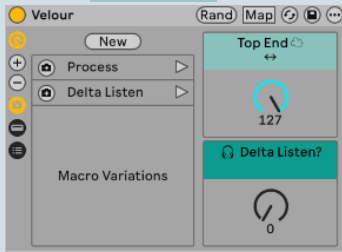
A focus is placed on phase coherence and fidelity, to maintain the original structure of the piece throughout, with methods of signal bolstering that blend cleanly with the original. You'll notice a theme of parallel-friendly effect racks going on, with implementations that can help prevent overdoing things with too heavy-handed processing. Even the high and low cuts provided by the *Velour* and *Woof* are parallel-friendly.

The Template Live Set.

Finalization comes with an Ableton Live Set that is pre-loaded with the Finalization Effect Racks. It has an Audio Track where you can drop your song that has most of the effects on it, a Parallel Pressure Return Track with ParallAux Smash, and the Main Track with the final Saturation and Limiting.

All of the racks except for the final Limiter are optional and thus begin disabled by default.



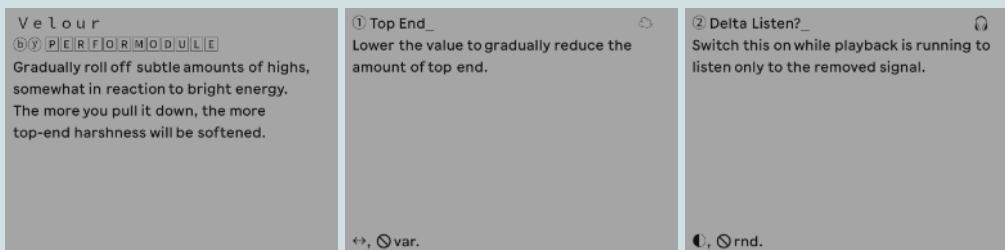
✓ **Velour.**

Gradually roll off subtle amounts of highs, somewhat in reaction to bright energy. The more you pull it down, the more top-end harshness will be softened.

If placed as the very first effect in the chain, it can help to alleviate the intensity of potential downstream aliasing generated or boosted by later processors (particularly, the Inflaturator).

Since the effect is very subtle, a *Delta Listen* control is included, allowing you to hear the content that is being removed. The Macro Variations are set up to snap this on and off.

Its slope is fairly gradual, so if you do need steep/abrupt hi-cut filtering, this won't be ideal. But if that is indeed the case, you should probably go back and address it in the mix anyways.



Note for All Devices: Info View Symbology:

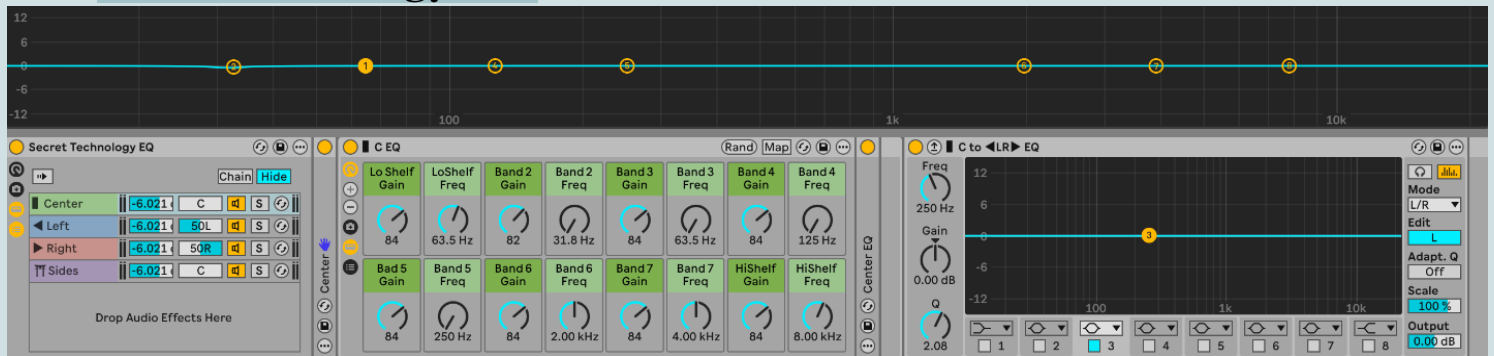
The info view (help) text for some macros shows symbols at the bottom. So what do those signify?

- ↔ This macro is enabled for X horizontal pad sliding in the Push 3's XYZ Mode.
- ↑↓ This macro is enabled for Y vertical pad sliding with the Push 3's XYZ Mode.
- ✎ This macro is enabled for Z pad pressure using the Push 3's XYZ Mode.
- ⊖var. This macro will keep its value despite switching Macro Variations.
- ⊖rnd. This macro will not be randomized when hitting the *Rand* button.
- This macro acts as a binary off/on switch. Values from 0 to 63.49999 will be *off*; 63.5+ will be *on*.
- ☰ This macro acts as a multi-selector switch. Value ranges will select between three or more discrete modes.



4 Finalization ~ Secret Technology EQ Effect Rack.

✓ Secret Technology EQ.



Use this to sculpt the various stereo layers of the audio. You can EQ the Center (Sum), Left, Right, and Sides (Difference) channels, plus the ability to further stereo-sculpt the Center and Sides material.

Let's break it down!

The device contains four chains, each featuring its own purposeful EQ. Each EQ is 50% in-parallel, so moves made will have less effect than typical, which reduces the tendency to overdo things.



The **Center** chain (green) gives you an EQ that works only on the Center (aka "Mid") channel, plus an additional EQ that provides LR nodes to alter the stereo tone balance of the Center-sourced content.



The **Left** chain (blue) is dedicated to the Left half.



The **Right** chain (red) is dedicated to the Right half.



The **Sides** chain (purple) provides for you an EQ that works only on the Side channel, plus an additional EQ that gives LR nodes to alter the stereo tone balance of the Side-sourced material.



✓ Tri-Level Splytter.



It splits the audio into adjustable Floor-, Mid-, and Peak-Level chains, which you can use to place disparate effects on. Why is this good for mastering? Applying loudness-boosting dynamic effects to only the mid level content and keeping the peak and floor levels natural can be useful, for example, to help unobtrusively add impactful density without boosting the peaks or the lowest noise floor so much.

While you *can* use this effect rack to go crazy with multi-level effects placements, *just because you can doesn't always mean you should*. In this context of audio finalization, we usually probably shouldn't.

I recommend trying just one effect to start: a compressor placed on the Mid-Level chain. Set its timing values to groove aesthetically with the pulse of the music and set the makeup gain so that the average loudness is the same or ever-so-slightly above the original.

This will allow you to compress the signal while avoiding touching the loudest peaks (which can help to maintain a natural feeling of transient punch) as well as prevent from boosting the noise floor.

Ableton's Compressor or Glue Compressor work great for this! (Compressor in Expander mode, too.) Multiband Dynamics, however, does not — nor indeed any device that does not convey neutral phase.



← An FX Drop-in Spot.

Use the "FX Macros" to map various parameters to one-knob macros for each level chain that you can use for automation to, for example, intensify the compression during a song's choruses. After carefully dialing in all your level-splitting and dropped-in effects' parameters, you can fold the rack's chain list to reduce screen clutter and still have access to your custom macros.

① Lower Splyt Point_ Set the threshold between which the Floor and the Mid Levels are split. The exact result will also depend on how the timing values are set.	② Upper Splyt Point_ Set the threshold between which the Peak and the Mid Levels are split. The exact result will also depend on how the timing values are set.	④ Mid Lvl On?_ Switch on or off the Mid Level. (Click on the "Mid & Low Lvl's" chain to reveal the nested Mid-Level chain.)	④ Mid Lvl On?_ Switch on or off the Mid Level. (Click on the "Mid & Low Lvl's" chain to reveal the nested Mid-Level chain.)
⑤ Peak Lvl On?_ Switch on or off the Peak Level.	⑥ Attack_ Sets the attack time for all the compression splytting. The pragmatic result is that effects placed on a higher-level chain will onset according to this value (i.e. use a faster attack to make the Peak Level effects come in quicker).	⑦ Release (maximum = Auto)_ Sets the release time for all the compression splytting. The pragmatic result is that effects placed on a higher-level chain will release according to this value (i.e. use a faster release to make the Floor Level effects drop out sooner).	⑧ Mid FX Macro_ To this you can map choice drop-in fx parameters in order to automate them during the song arrangement.

Tip: Use the Macro Variations to quickly isolate or mute particular level chains.



6 Finalization ~ Woof Effect Rack.

✓ Woof.



Use it to both cut as well as boost low bass at the same time. The PerforModule take/twist on certain devices that emulate canines and deities, now possible natively in-Ableton thanks to an update to *Auto Filter*. Due to its friendly, always-parallel nature, the Low Cut functions as a shelf about an octave below the cutoff, maxing out at -6.0206dB (½ total energy). This allows for arbitrarily gentle filtering & mitigates the likelihood of thinning things out too much. Add to that a low boost you can stack on.

You can use *Woof* to...

- ✓ Gently and precisely cut low end with minimal phase offset.
- ✓ Bolster low-end resonance with a parallel lo-pass additively stacked on top of the original.
- ✓ Do both of the above in a coordinated manner, and blend between them to any degree.
- ✓ Alter the resonance of both layers separately, with an optional touch of drive on the stack.
- ✓ Apply gentle low-cut filtering to a parallel chain or return track.

Low cut? Low resonance boost? Let's make the most of both. Carefully trim excessive ultra-low infrasonics while also enhancing the fundamental for a tight, powerful, punching sound.

Various combinations of settings can fine-sculpt the resultant sound with nuanced versatility. Utilize the macro variations as shortcuts to starting points for achieving specific goals:

Parallel LoCut: A natural-slope filtering without any resonance boost, but a bit of anti-resonance dip.

Resonant LoCut: A cut with a slight resonance boost just above the cutoff.

50/50: Half cut, half boost; subtle; a sloping dip with a focused bump within. The default.

Smooth LoShelf: A smoothly-ramping, light low shelf boost.

Pul LoShelf: A smooth low shelf boost with an anti-resonant bump above the cutoff.

Reso LoShelf: A low shelf boost with a resonant bump just below the cutoff.

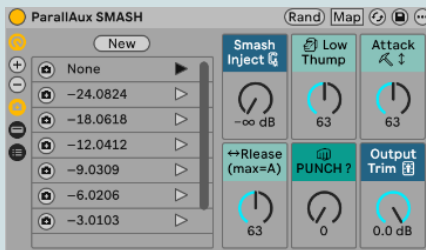
ResoPul LoShelf: Has a bump just below the cutoff and an anti-resonant dip close to an octave above it.

Note: Resonance Frequency Precision:

The *Stack Reso* tends to be spot-on to the numerical *Freq* setting, whereas the focus of the *Cut Reso* is more dependent on the other parameters and tends to land a bit above that. So if you're using mostly cutting, consider setting *Freq* a little bit below the actual resonance point you want to bolster. Click on "Show/Hide Devices" to unfold & see the selected frequency... or set it by ear!



✓ ParallAux SMASH.



Dual analog/digital compressors (in parallel with each other, of course) that begin with thresholds and ratios slammed to their utmost.

You feed signal into that slamminization, which is then summed with the original signal for added parallel "oomph". ParallAux SMASH is borrowed from the PerforModule *ParallAux* pack.

It's pre-positioned on the return track 'Parallel Pressure' in the *Finalization* Template Ableton Live Set.

The purpose of SMASH is to add a touch of signal that has been deeply pushed so that it is "swimming" in compression, every moment moving either up or down. This can be a good way to add perceptible density and/or punch, and is one of your tools for increasing overall loudness.

Two Modes: Try both!

The latest update has two distinct modes: SMASH (the default mode) is ideal for adding density.

...Or flip the PUNCH mode switch to invert the behavior, emphasizing transient punch instead!

Instructions:

- _Bring up the Smash Inject macro until you hear a perceptible change.
- _Adjust Low Thump for more or less retainment of bass.
- _Attack: Faster (smaller number) to squash more transients. Slower to let more transients through.
- _Release: Faster (smaller number) for a louder, more aggressive sound. Slower for smoother.
- _Automate the onset, ending, and quiet interlude sections to avoid audible pumping or swelling.

Don't be shy with the knobs! Sweep them around, hear how the extremes sound.

Since this compression is in-parallel, you can be a bit more aggressive than if it were on the full signal.

You can enhance or alter a piece's feeling of groove, to a degree. Carefully hone in on sweet spots.

Idea: place it within one of the free [PerforModule Emphasizers](#) racks to enact pre-emphasis, so that the compression reacts more or less to certain frequencies.

ParallAux SMASH
PERFORMODULE

Dual analog/digital compressors (in parallel with each other, of course) that begin with thresholds and ratios slammed to their utmost. You feed signal into that slammination, which is then summed with the original signal for added parallel "oomph".

① **Smash Inject_**
Fine-tunes just how much of this smash to inject into the mix.

Ⓜ rnd.

② **Thump_**
Adjusts the sidechain EQ frequencies of both compressors to allow more bass through unimpeded, one using a lowering low shelf and one using a rising low cut.

Ⓜ var.

③ **Attack_**
Adjusts compression onset. Use a higher (slower) attack value to let more transients through. Use a faster attack for more distortion and peak reduction.

Ⓜ, Ⓜ var.

④ **Release_**
Adjusts compression recovery. Use a higher (slower) release value to keep compressing steadily after it's been triggered. Use a faster release for more distortion and loudness.

↔, Ⓜ var.

⑤ **PUNCH Mode?_**
Switch to PUNCH mode instead of SMASH mode to invert the timing behavior of the compression action. This generally results in a sound that emphasizes transient punch moreso than accentuating the space in-between transients.

Ⓜ, Ⓜ var.

⑥ **Output Trim_**
Use this to automate the output level. It's not usually necessary since you can simply change the amount of Smash Inject instead, but otherwise there would just be a blank knob in this space...

Ⓜ var, Ⓜ rnd.



8 Finalization ~ Inflaturator Effect Rack.

✓ Inflaturator.



So yeah. The Inflaturator. Just in case you need a song-finalization saturator.

I made you one. It's as close to a clone of a particularly infamous inflationary device as one can get with Ableton's Saturator (nulling to minus 64 dB at a particular combination of settings) — yet with the added ability to fine-tune the amount of low-end crush for a more focused, thumping sound.

Even tiny percentages can be effective at times. It provides up to about 5.8dB of loudness depending on the source material, tending to bring forth the perceptibility of quieter signals.

Keeping it clean!

With Low Crush set to 84, peaks are generally curtailed around 0dB, but this can result in a degree of perceptible distortion, especially on very loud inputs. Roll Low Crush back to allow more low-end peaks through (to be taken care of by subsequent limiting) until finding a sufficiently immaculate sound.

Further fine-tune the lowest fundamental to be extra clean and resonant with the Root Reso macro (tuneable with Root Freq). Boost it far enough and it will begin to act as a dynamic EQ node expansion, actually increasing the sustain of that particular frequency. Along with Woof, this can be helpful for making sure the low end foundation of any genre of music is full and slamming on any sound system.

Inflaturator
by PERFORMMODULE
So yeah. The Inflaturator. Just in case you need a song-finalization saturator. It's as close to a clone of a particularly infamous inflationary device as one can get with Ableton's Saturator (nulling to minus 64 dB at a particular combination of settings) — yet with the added ability to fine-tune the amount of low-end crush for a focused thump.

① **Inflate Wet %**
Amount of signal feeding through the inflationation. Even tiny amounts can be effective at times. It provides up to about 5.8dB of loudness depending on the source material, bringing forth quieter signals. Try turning it way up, fine-tuning the macros while the sound is blatantly obvious, and then dialing it way back.

var.

② **Low Crush**
Amount of damage taken by the general lower end. Since bass frequencies tend to carry the most energy, increasing this will make the peak limiting more robust at the expense of possible audible grit, whereas lowering it will maintain a more natural sound, but allow more peaks through.

var.

③ **Root Resonance**
Further allow even more bass to poke through unsaturated, this time focused on a very specific frequency you select. If you turn it up enough, it will begin to reactively enhance the sustain of the bass beyond its natural state — effectively kinda like a dynamic EQ boost. Please tune it carefully to a key fundamental.

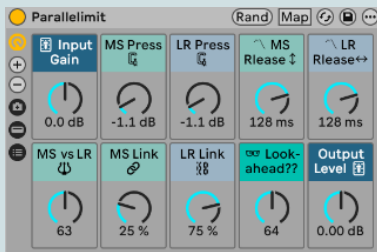
var.

④ **Root Frequency**
Set the focus point for the Root Resonance. It usually sounds good to place this on the loudest low fundamental peak of a piece.

var.



✓ Parallelimit.



So you can't choose between LR or MS limiting? That's ok. Use Parallelimit to blend as much or little of each as you like. Each has their own adjustable Press, Release, and Stereo Link values, allowing a more careful fine-tuning of the overall character than is usually possible, with no detrimental side-effects.

As one example, you could blend some mostly-linked LR limiting with a fast release along with some mostly-unlinked MS limiting that has a slower release. Whatever you want.

The signals are mathematically summed to the best decimal precision available, leading to expected peak level output if both have the same amount of Press applied.

Parallelimit is not only a safety net to prevent peak level overs, but can also be used quite effectively to increase loudness and add character to the sound (potentially also affecting feelings of groove and density) by deliberately pushing into it.

Parallelimit's **LR Mode** is adept at stridently and completely curtailing peaks, since it's working on the direct waveforms as they shall come out of the speakers.

The less stereo link percentage it has, the more it tends to reduce average stereo width (by bringing wide-panned, outlying elements closer to each other in volume), and potentially causes stereo center drift (which is not always necessarily a bad thing). In other words: more LR Link % = more stereo width.

The **MS Mode**, when pushed into, will affect the tone more and can react with a slight decrease to low end (predominantly below about 200Hz), for a relatively brighter overall sound. It also tends to result in a bit louder RMS for the same amount of peak reduction compared to LR Mode.

Its affect on stereo width according to the MS Link setting can go either way, depending on the existing content. If a lot of Sides content is causing reduction, less linking will likely decrease width; whereas if mostly Center content is engaged, less linking would "reduce narrowness" – increasing width.

② MS Press_ Sets the threshold for the MS Limiter, effectively increasing the amount of limiting once the audio begins hitting it. When pushed into, can react with a slight decrease to low end (predominantly below about 200Hz). It also tends to result in a bit louder RMS for the same amount of peak reduction compared to the other mode. ⊞ rnd.	③ LR Press_ Sets the threshold for the LR Limiter, effectively increasing the amount of limiting once the audio begins hitting it. This mode is adept at stridently and completely curtailing peaks. ⊞ rnd.	④ MS Release_ Sets the release value for the MS chain. Shorter times can allow for more more loudness at the expense of potential audible distortion, whereas slower release may be cleaner but not able to be pushed as loud. Try to find a sweet spot that reacts musically to the groove of the song while Press is temporarily exaggerated. ⬆	⑤ LR Release_ Sets the release value for the LR chain. Shorter times can allow for more more loudness at the expense of potential audible distortion, whereas slower release may be cleaner but not able to be pushed as loud. Try to find a sweet spot that reacts musically to the groove of the song while Press is temporarily exaggerated. ⬆
⑥ MS vs LR_ Blend between Mid-Side and Left-Right Limiting. The MS Limiting is in Standard Mode with Legacy Smoothing, whereas the LR Limiting is in True Peak Mode with New Smoothing. If you need more peak control, consider leaning towards the LR side. But if you need more perceptible loudness, consider leaning towards the MS side.	⑦ MS Link_ Link between the Center ("Mid") and Side channels. At zero %, center channel material will only trigger center channel limiting and the same for the sides. At 100%, material triggered by the center or the sides will limit the entire signal. How the average stereo width becomes affected is very much dependent on the source material. A blend is usually recommended.	⑧ LR Link_ Link between the Left and Right channels. At zero %, a given channel's signal will only trigger compression on itself and average stereo width will generally decrease. At 100%, material triggered by either side will limit the entire signal. A blend is usually recommended.	⑨ Shared Lookahead?? The Lookahead setting is necessarily shared between the models, which prevents any wonky phase issues. Choose between 1.5, 3, or 6 ms. This can have a prominent effect on the sound, so make sure to try all three modes after dialing in the loudness, releases, and link values to decide which you prefer. ⚠, ⚠ Do not automate!



10 Finalization ~ Incorporating Your Favorite Plugins.

✓ Adding Your Own!

"But i want to use my super-spiffy new limiter plugin!" you may say. That's fine! It's totally cool to augment or replace the devices with some of your own favorite tried-and-tested mastering devices. Finalization can serve as a nice starting bed for designing your own bespoke template, being set up with easy before/after testing, and the parallel pressure channel. Just add in your favorite effects!

- ✓ Use your favorite phase-neutral compressor, series of compressors, or parallel stack of compressors in the Parallel Pressure channel (heavy g.r.) or within the Tri-Level Splytter (light g.r.).
- ✓ Use instances of your favorite mastering EQ within the chains of the Secret Technology rack.
- ✓ Use your favorite mastering saturator, clipper, and/or limiter on the Main channel.
- ✓ Use Ableton's External Audio Effect to incorporate your analog gear. Aw yeah!
- * Feel free to keep the Finalization racks on standby for the occasional extra adjustment here and there.

Here's a shortlist of recommendations on some of my personal favorite mastering plugins:

TDR & OD plugins: Absolutely top-notch sound quality, workflow, and built-in metering.

- ✓ *De-Edsger* is an absolute house favorite, used for delicate softening of outlying peak nodes.
- ✓ *Infrasonic* is excellent for precisely-tuned bottom-end adjustments / low-cutting.
- ✓ *Elliptical* and *Ancora* are excellent for precise bottom-end narrowing / solidifying.
- ✓ *Ultrasonic* is excellent for precisely-tuned aliasing-range high-cuts.
- ✓ *Arbiter* can be great as a de-esser / dynamic eq that reacts to relative tone rather than band level.
- ✓ *Limiter 6 GE* is a great fully-functioned serial two-buss limiter / dynamics multi-tool.
- ✓ *Slick EQ M* is a good eq choice to focus on broad, smooth, natural-sounding moves.
- ✓ *Kotelnikov GE* is an extremely nuanced and refined compressor, suitable for mastering.
- ✓ *Finesse* is one of those "resonance suppressors", but better than most or all or the other ones.
- ✓ *Nova GE* can provide solutions to pretty much any dynamic EQing need you could conceive of.
- ✓ *Prism* is a helpful, customizable spectrum analyzer.

Miscellaneous Plugins: A compressor, some secret sauce, and a saturator/clipper/waveshaper.

- ✓ *FirComp2* by [JonV](#): Literally the cleanest compressor. Good choice for parallel buss pushing.
- ✓ *ReFine* by [lkjb](#): secret sauce! I guess it's not a secret anymore! Use in-line or in-parallel.
- ✓ *RCInflator* by [ReaTeam](#): Shameless inflator clone. Use just before your final limiter(s).

Fixation Studios MaxForLive Devices: Relatively few Max devices exist which specialize in mixing and mastering (as opposed to creative sound design, workflow, etc). I beta test these and they are the best:

- ✓ *FS Clipper*: I don't use clippers in mastering much at all, but this is one that i actually do fuck with.
- ✓ *HiFreqLimiter*: Reduce upper-end harshness only when it happens. Very helpful; specific purpose.
- ✓ *Multiband Saturator*: Powerful and versatile 3-band MS saturation. Dig the hysteresis function.

Limiters: I will often use several limiters in-sequence, each catching different slight peaks in different ways.

The following happen to be free, and also have consistently beat out costly, hyped plugins in-practice:

- ✓ *Loudmax* by [Thomas Mundt](#): One of the cleanest limiters. Fairly slow release; non-aggressive.
- ✓ *kHs Limiter* by [Kilohearts](#): Sleeper right here. Punchy sound, performs well in all tests.
- ✓ *TB Barricade V3* by [ToneBoosters](#): Used as final safety limiter for [The Music Production Podcast](#).
- ✓ *W1 Limiter* by [George Yohng](#): When you want a little more aggression, but still a nice sound.

